

Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A method for identifying agents that modulate PP2A methylation, the method comprising steps of:
providing a plurality of candidate test agents;
assessing effects of individual candidate test agents on PP2A methylation status in a PP2A methylation assay; and
determining, based on the assessed effects, that a particular candidate test agent modulates PP2A methylation status. ~~a compound for altering a protein activity, comprising: identifying a compound that modulates methylation of a protein phosphatase that affects a protein activity and determining that the protein activity is altered by modulating with the compound methylation of the protein phosphatase.~~
2. (Canceled)
3. (Currently amended) A method for identifying agents that modulate the phosphorylation status of a phosphorylated protein whose phosphorylation status is regulated by PP2A, comprising steps of: ~~A method according to claim 2,~~
providing a plurality of candidate test agents;
assessing effects of individual candidate test agents on PP2A methylation status in a PP2A methylation assay; and ~~wherein the protein activity is the phosphate level of a phosphorylated protein~~
determining, based on the assessed effects on PP2A methylation, that a particular candidate test agent modulates the phosphorylation status of the phosphorylated protein.
4. (Currently amended) The method of claim 3, ~~A method according to claim 3,~~ wherein the phosphorylated protein activity is phosphorylation of tau.

5. (Currently amended) The method of claim 4, A method according to claim 4, wherein tau is hyperphosphorylated, and wherein the test agent compound increases methylation of PP2A and decreases tau hyperphosphorylation.
6. (Currently amended) A method for identifying a composition that modulates PP2A methylation status, the method comprising steps of:
 - providing a composition;
 - assessing effects of the composition on PP2A methylation status in a PP2A methylation assay that contains PP2A and one or more of a PP2A methylase enzyme and a PP2A demethylase enzyme; and
 - determining, based on the assessed effects, that the composition modulates PP2A methylation status, for altering a protein activity, comprising: identifying a composition that modulates methylation of a protein phosphatase that affects a protein activity, using the composition to modulate methylation of the phosphatase, and determining that modulating phosphatase methylation alters the protein activity.
7. (Currently amended) The method of claim 6, A method according to claim 6, wherein the composition is an extract of a natural product.
8. (Currently amended) The method of claim 6, wherein A method according to claim 6, ~~wherein,~~ the composition is an extract of a traditional medicine.
9. (Canceled)
10. (Currently amended) The method of claim 17, A method according to claim 9, wherein the phosphorylated protein activity is tau ~~phosphorylation~~.
11. (Currently amended) The method of claim 17, A method according to claim 9, wherein tau is hyperphosphorylated, and wherein the composition compound increases methylation of PP2A and decreases tau hyperphosphorylation.
12. (Withdrawn) A compound identified by the method of claim 1.
13. (Withdrawn) A composition identified by the method of claim 6.

14. (Withdrawn) A composition comprising a compound according to claim 12.
15. (Withdrawn) A method for treatment of cells to alter therein an activity of a protein, comprising administering to the cells by an effective route a compound of claim 12 in an amount effective to alter therein the activity of the protein.
16. (Withdrawn) A method for treatment of cells to alter therein an activity of a protein, comprising administering to the cells by an effective route a composition of claim 13 in an amount effective to alter therein the activity of the protein.
17. (New) The method of claim 1 or claim 3, wherein the PP2A methylation assay determines activity of a PP2A methylase enzyme or PP2A demethylase enzyme.
18. (New) The method of claim 1 or claim 3, wherein the PP2A methylation assay contains PP2A and one or more of a PP2A methylase enzyme and a PP2A demethylase enzyme.
19. (New) A method for identifying compositions that modulate the phosphorylation status of a phosphorylated protein whose phosphorylation status is regulated by PP2A, comprising steps of:
 - providing a plurality of candidate test agents;
 - assessing effects of the composition on the PP2A methylation status in a PP2A methylation assay that contains PP2A and one or more of a PP2A methylase enzyme and a PP2A demethylase enzyme; and
 - determining, based on the assessed effects on PP2A methylation, that the composition modulates the phosphorylation status of the phosphorylated protein.
20. (New) The method of claim 6 or claim 19, wherein the assessed effects comprise activity of the PP2A methylase enzyme.
21. (New) The method of claim 6 or claim 19, wherein the assessed effects comprise activity of the PP2A demethylase enzyme.